FIELD SAMPLING PROCEDURE FOR SAMPLING PLUTONIUM-CONTAMINATED SOILS TO SUPPORT TREATABILITY TESTS AT NRT AND LANL

Manual No. 21100-PM-OU 02.05

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Field Sampling Procedure for Sampling Plutonium-Contaminated Soils to Support Treatability Tests at NRT and LANL

TITLE:
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Approved By:

[signature] 7/7/92
Manager, ERT Division Date

Effective: 7/20/92

1. PURPOSE/SCOPE

This procedure address the collection of soil samples for OU 02.05's treatability tests at NRT and LANL.

This sampling procedure delineates where to take the sample in that area and the procedure for taking the sample. The sampling procedure will result in a sample of 100 pounds of surficial soils to be used in the NRT test work and two samples of 200 to 250 pounds each to be used in the magnetic separation test work.

2. DEFINITIONS/ACRONYMS

2.1 LANL -- Los Alamos National Laboratories.

2.2 NRT -- Nuclear Remediation Technology.

3. PROCEDURE

3.1 Sample Program

RESPONSIBILITIES	ACTIONS
3.1.1 Investigator	Review the attached maps and locate the selected soil sampling area within OU-2 that will provide the appropriate samples to support the NRT and Magnetic Separation (LANL) plutonium in soil treatability studies.

RESPONSIBILITIES		ACTIONS
		NOTE **Although the general sampling area will be located as indicated on the sampling maps; place location markers at the exact location, which will be used for sampling reference the actual locations to the location markers located in the field.**
3.1.2	Investigator	Define and prepare labels for the site locations described in the Sample Plan, the attached map (Attachment 1), and Attachment 2.
3.1.3		Obtain Radiological Engineering clearance and support to access the area.
3.1.4		Implement applicable protective measures for accessing the area per the Rocky Flats Health and Safety Practices Manual and the applicable health and safety plan.
3.1.5		Identify the area to be sampled which is 30 feet long by 30 feet wide.
3.1.6		Divide the area into 10 foot by 10 foot squares, resulting in 9 squares. Each square will be divided into a grid of six rectangular sample blocks during the sampling process measuring 3 feet-4 inches wide by 5 feet high. There will be one sample taken from one of the sample blocks in each of the 9 squares.
3.1.7		Label these 10 ft by 10 ft squares.
3.1.8		Repeat steps 3.1.5 to 3.1.7 until all locations have been labeled.

3.2 Sampling Procedure

RESPONSIBILITIES	ACTIONS
	NOTE **A modified random sampling method will be utilized to provide a representative composite sample for a sampling site. The procedure involves the division of the site into 9 equal grid areas. Each area will be subdivided into six subarea rectangles to form sampling blocks (see the Attachment 2). Within each grid area, a subarea block will be selected randomly for sample collection.**
3.2.1 Sampler	Obtain the following Equipment: a. Drum, DOT 17H, 8 gallon capacity. b. One 10 foot by 10 foot rope grid pattern. The rope pattern will be subdivided into six equal rectangles, 3 feet 4 inches by 5 feet. c. Two shovels with stainless steel pointed blades. d. One 25 foot measuring tape. e. Cleaning and decontamination equipment as required (See 3-21000-ADM-FO.03, General Equipment Decontamination).
3.2.2	Obtain Radiological Engineering clearance and support to sample the area.

RESPONSIBILITIES		ACTIONS
3.2.3	Sampler	Implement applicable protective measures for accessing the area per the Rocky Flats Plant Health and Safety Manual and the applicable health and safety plan.
3.2.4		Starting with grid number 1, roll a die and record the result next to the grid number in the block number column of the sample log (Attachment 3 and 4). In this manner, a random number 1 to 6 will be generated for each of the 9 grid areas.
3.2.5		Take the 10 foot by 10 foot rope pattern to the grid area to be sampled.
3.2.6		Spread the pattern using the four corner stakes.
		NOTE **Shift the sample location to avoid heavy vegetation, such as small bushes, tumbleweeds, etc. Grass-type vegetation is to go with the sample.**
3.2.7		Go to the grid block selected by the die roll.
3.2.8		Wet down the sampling area with distilled water. This action is taken to minimize the possibility of resuspending plutonium during the sampling operation.
3.2.9		In the approximate center of the block, excavate a 12 inch wide, 18 inch long, 6 inch deep section of soil with a stainless steel shovel.

RESPONSIBILITIES	ACTIONS
3.2.10 Sampler	Once the soil sample is removed, the small excavation will be filled by using the shovel to grade the sides down into the excavation. This will result in a small depression with native soils to enhance revegetation.
3.2.11	Place the soil samples into the 8 gallon DOT 17H drums.
3.2.12	Decontaminate the equipment using 3-21000-ADM-FO.03.
3.2.13	Handle any protective clothing using 3-21000-ADM-FO.06, Handling of Personnel Protective Clothing.
3.2.14	Containerize and label the samples in accordance with 3-21000-ADM-FO.13, Containerizing, Preserving, Handling and Shipping of Soil And Water Samples. This includes the implementation of chain-of custody controls. The containers to be used for these samples is defined in this procedure and not in 3-21000-ADM-FO.13.
3.2.15	Complete the log entry (see Attachment 3) and the Solid Substances Sampling Form (see Attachment 4).
3.2.16	A copy of the Solid Substances Sampling Form shall be tranmitted to the EM records center per 5-21000-OPS-FO.02, Transmittal of Field QA Records.
3.2.17	Transmit the samples as directed by the Project Manager, to the individual responsible for disposition of these samples. Your supervisor can provide the identity this individual.

4. REFERENCES

4.1 21000-WP-OU02.05, Field Sampling Plan For Sampling Plutonium Contamianted Soils at Operable Unit No. 2.

4.2 Rocky Flats Health and Safety Practices Manual.

4.3 5-21000-OPS-FO.02, Transmittal of Field QA Reords.

4.4 3-21000-ADM-FO.03, General Equipment Decontamination.

4.5 3-21000-ADM-FO.06, Handling of Personnel Protective Clothing.

4.6 3-21000-ADM-FO.13, Containerizing, Preserving, Handling and Shipping of Soil And Water Samples.

5. ATTACHMENTS

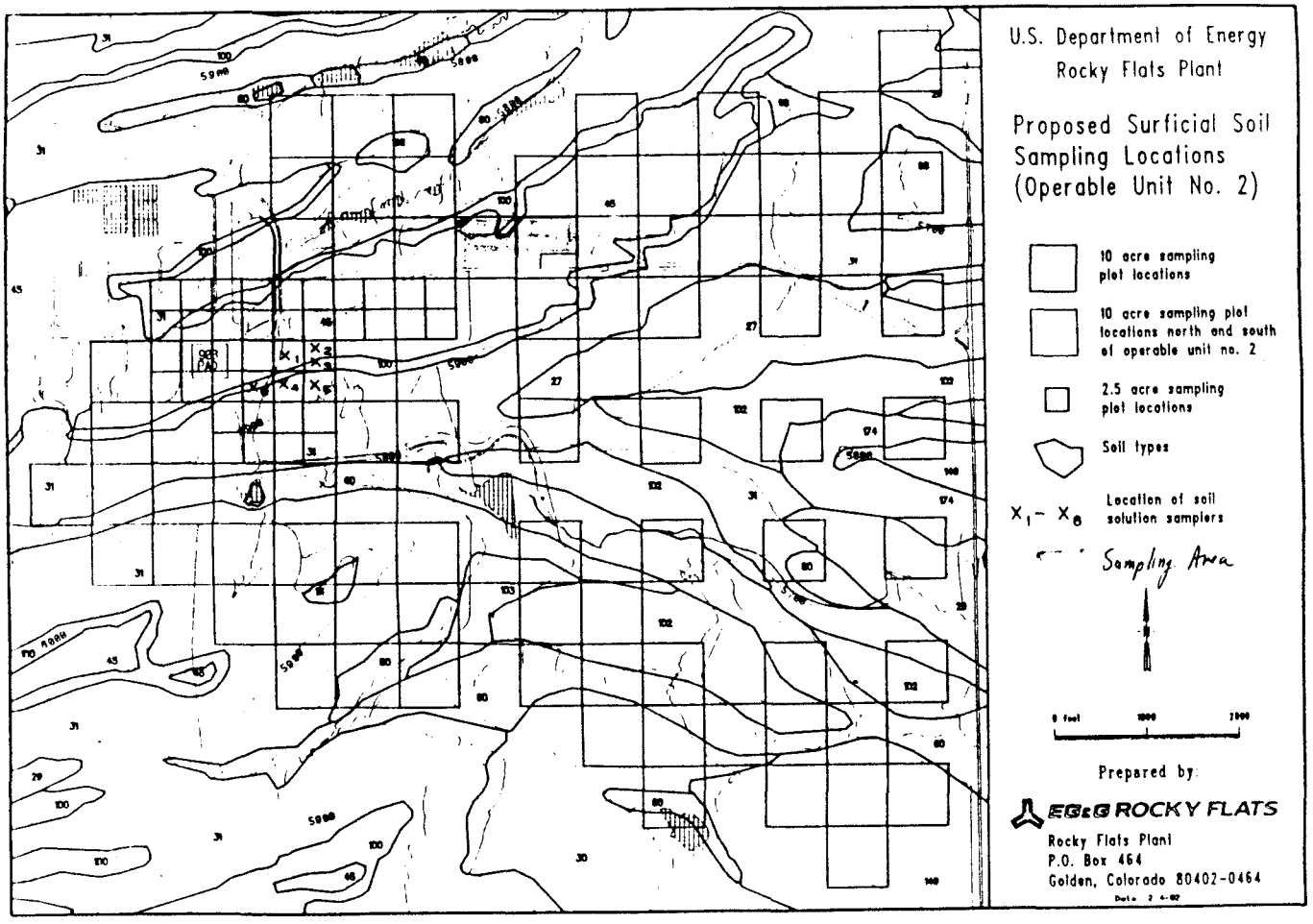
Attachment 1: Sample Location Map

Attachment 2: Sampling Grid

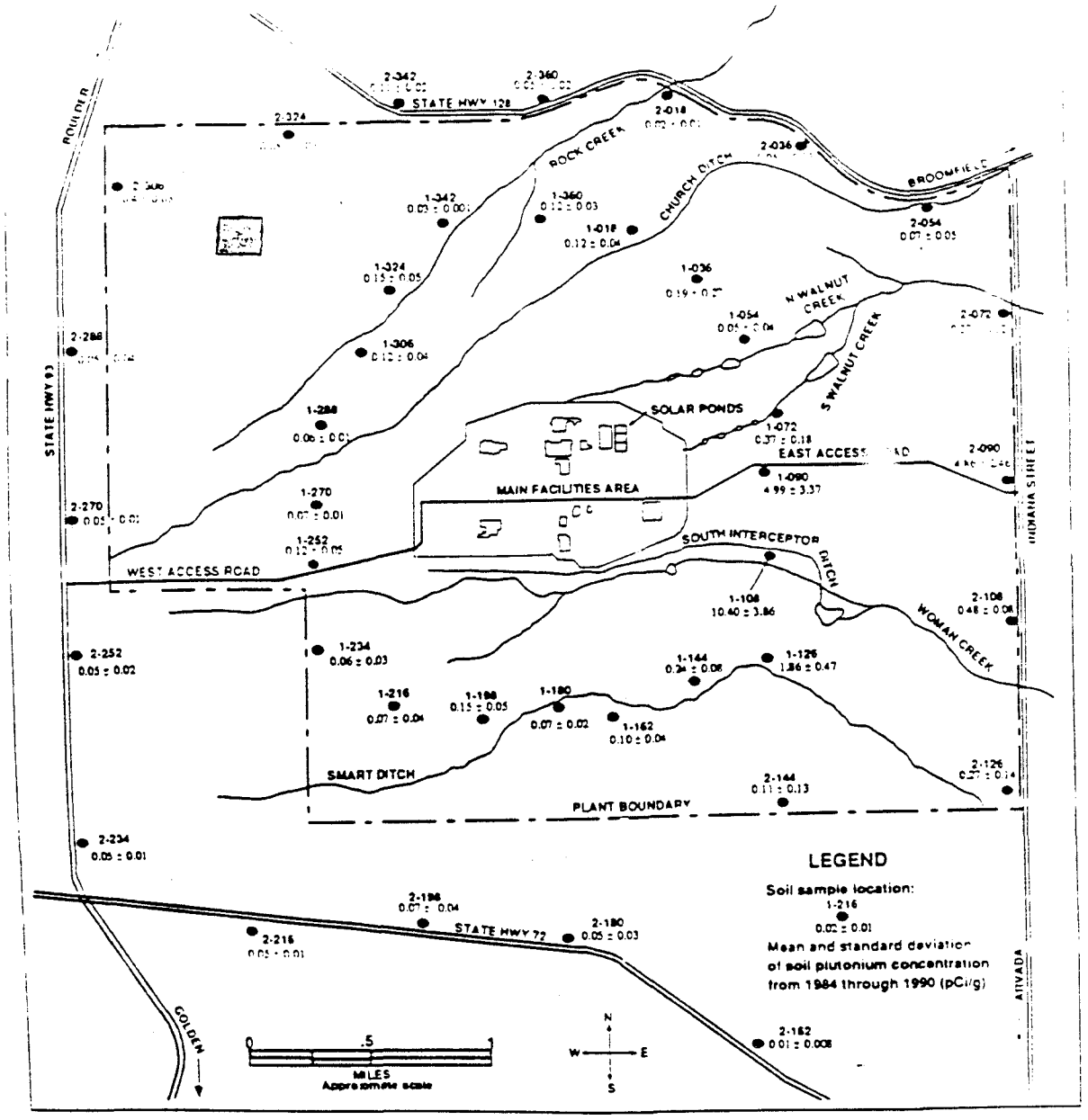
Attachment 3: Example Sample Log

Attachment 4: Solid Substances Sampling Form

ATTACHMENT 1
Sample Location Map



ATTACHMENT 1 (Continued)
Sample Location Map



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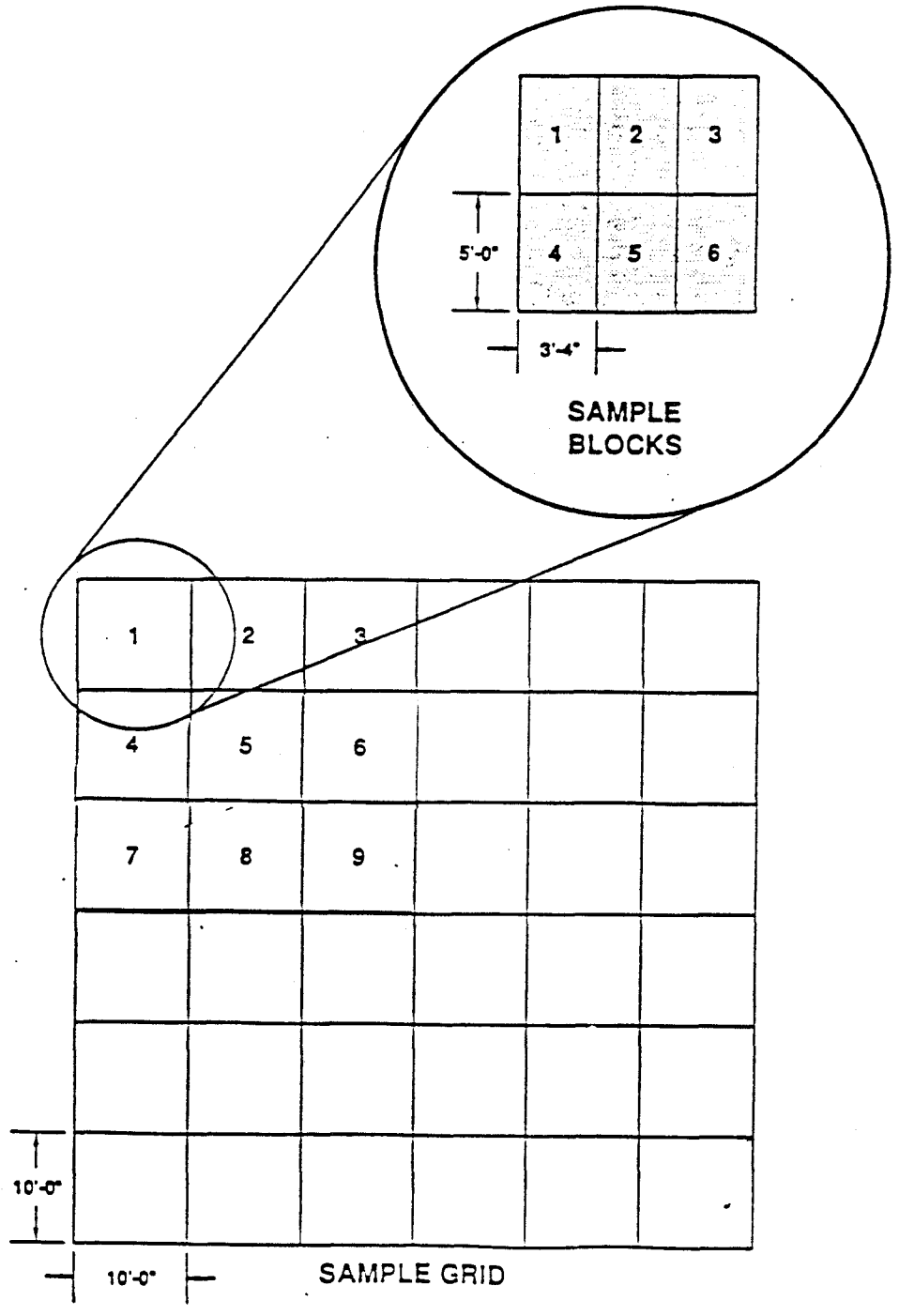
Proposed Sampling Area

ATTACHMENT 2
Sampling Grid



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SAMPLE LOCATION AREA

ATTACHMENT 3
Example Sample Log

Project _____

Page ____ of _____

SAMPLE LOG

Date	Time	Sample Collection Location		Sample Identification Number	Quantity/Type	Logged By
		Grid No.	Block No.			
		1				
		2				
		3				
		4				
		5				
		6				
		7				
		8				
		9				
		10				
		11				
		12				
		13				
		14				
		15				
		16				
		17				
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		29				
		30				
		31				
		32				
		33				
		34				
		35				
		36				

ATTACHMENT 4
Solid Substances Sampling Form

SOLID SUBSTANCES SAMPLING FORM

Date _____

Project _____ Time _____

Task No. _____ Sampling Team Members _____

Site _____ Location _____

Sample ID _____ Quantity _____

SUBSTANCE DESCRIPTION

Sample Type [ ] Soils _____
[ ] Sediments _____
[ ] Other _____

Sampling Procedures/Methods (describe)

_____

_____

_____

_____

Sample Containers	Comments
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

General Comments

_____

_____

_____

_____